The above-described polynucleotide comprising a DNA sequence which codes for a protein GLUT4V85M is, in a preferred embodiment, suitable for replicating said polynucleotide in a yeast cell or for expressing the part of the polynucleotide, which encodes the protein GLUT4V85M, in a yeast cell in order to produce to give the protein GLUT 4 V85M protein. A yeast cell from Saccharomyces cerevisiae is particularly suitable. For replication and expression in a yeast cell, the polynucleotide comprising a DNA sequence which encodes ealls for a protein GLUT4V85M protein is present in the form of a yeast vector. The polynucleotide region coding for the GLUT4V85M protein may be operationally linked to a yeast cell-specific promoter promoter such as, for example, the ADH promoter promoter (alcohol dehydrogenase promoter promotor) or the HXT7 promoter promotor (hexose-transporter promotor). The yeast sectors are a group of vectors which were was developed for cloning of DNA in yeasts.

The invention <u>further extends</u> <u>furthermore relates</u> to a <u>yeast cell from</u> <u>Saccharomyces cerevisiae</u> <u>yeast cell</u> in which all glucose transporters are no longer functional (=hxt (-)) and which contains no functional Erg4 protein. Such a yeast cell is preferably a yeast cell deposited as <u>Saccharomyces cerevisiae</u> DSM 15187 with the DSMZ (Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH, Mascheroder Weg <u>1b</u>, <u>D-38124 Braunschweig</u> <u>Germany 16, 38124 Brunswick, Germany)</u>, an International Depository Authority (IDA) as <u>established under the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure</u>, on September 10, 2002.

The invention also extends relates to a yeast cell in which all glucose transporters are no longer functional and which contains no functional Fgyl and no functional Erg4 protein. The lack of a functional and Erg4 protein and a functional or of an Fgyl protein may be attributed in particular to an interruption of the corresponding coding genome sections or to a partial or complete removal of said coding genome sections. A particular example of a yeast cell of the present invention Proference is given to using as yeast cell which contains no functional glucose